AMERICAN VETERINARY REVIEW,

DECEMBER, 1882.

ORIGINAL ARTICLES.

THE HORSE'S FOOT.

BY A. ZUNDEL.

(*Continued from page* 328.)

LAMINITIS.

III. *Pathological Anatomy.* At the initial period of laminitis, when there is only simple congestion of the keratogenous apparatus, and especially of the podophyllous tissue, the subhorny tissues are in a condition of sanguineous derangement, characterized by objective signs. When the hoof covering them during life is removed, they are found of a dark red color, in a kind of eythema. When pressed between the fingers, their thickness is noted to be increased, and they are found to be gorged with blood, an incision made through them allowing the escape of a large quantity of that fluid.

If the laminitis exists for several days, the podophyllous tissue is found to be infiltrated with plastic exudations, and if there has been hemorrhage or apoplexy, blood is found between both the sensitive and insensitive laminæ. In other cases there is pus, and in case of gangrene, the tissues are found of a livid color.

The alterations are still more serious in cases of chronic founder. When a foot, foundered for some time, is divided by the saw in its antero-posterior axis by a section of all the parts,

the thing first noticed is a change in the connection of the os pedis with the wall. These changes, however, exist principally at the toe, and extend as far as the half of the quarters, on a level with the lateral cartilages of the foot, while further backwards they are not to be observed. On the side some laminæ are always found in their normal condition, as can be seen by a section of the foot made transversely. Generally, a yellowish substance, of horny appearance, but softer, fills up the space situated between the walls and the keratogenous structure. This is the product of the exudation of the inflamed podophyllous lamintæ, mixed with the horny substance which they secrete normally. These laminæ are themselves hypertrophied, being sometimes one and two centimeters in length and exceeding by four or five times their normal size. The keraphyllous laminæ are also hypertrophied, a condition which is evidently due, as respects the podophyllous tissue, to the increase of vital activity, resulting from the inflammatory condition of the tissue and to t... infiltration by fibroplastic exudation, resulting from the inflammation. As to the keraphyllous laminæ, they repeat on the internal face of the wall, in an inverse manner, the disposition of the secreting laminæ of the hoof between which they are formed and lodged. These, however, as they increase in extent, unite at their base in the whole of that portion which does not cooperate to their union with the podophyllous bands, and then forms a compact mass uniting most frequently with the internal face of the wall. Some times this mass of yellowish hoof occupies the whole space between the os pedis and the wall, but in some cases it adheres only to the wall, when it forms around the keratogenous tissue, a new wall, also provided with keraphyllous laminæ, and there is formed between it and the normal wall that porous, brittle mass, without homogeneity, which fills up the space, which constitutes the seedy toe. The mass thrown between the wall and the os pedis presses upon it; the anterior face of the bone assumes a vertical direction, and the os pedis presses towards the solar arch on its anterior border at a point situated posterior to that where, in normal feet, this border rests. Notwithstanding its resisting power, the wall gives to the effort of the mass interposed in front, the

form of the foot changes, and then results the change to the oval in the contour of the foot. Under the influence of the displacement of the phalanx, not only the flattening and afterwards the convexity of the sole and even its perforation results, but the plantar cushion is itself pressed down and crushed between the bone and the frog, which is then generally atrophied. A hoof of new formation is often developed between the sole and the inferior face of the phalanx, in order to prevent it from necessarily sinking. This increases the pressure upon the bone and contributes to its atrophy and sometimes to its complete disintegration.

But, between the surface of the coronary band and the origin of the hoof, whose formation is anterior to the laminitis, there may also be a new layer of hoof, more resisting than that which occupies the space between the wall and the podophyllous tissue, which is no more hoof mixed with the fibrinous exudation, but a pseudo-hoof secreted by the coronary band. The fibres of this hoof, however, instead of being rectilinear and growing down in the direction of the old wall, with the fibres of which they are continuous, are, on the contrary, sinuous and nodulated, and disposed to take a somewhat horizontal direction. There is often, besides the old wall, a deep horny tumor, a keraphyllocele which grows inside, attempts to replace the soft horn secreted by the podophyllous tissue, and adds to the pressure of the os pedis, by forming a new wedge, more solid and resisting, which produces a displacement of the phalanx, whose anterior face then often becomes more than vertical. This horny secretion from the coronary band is made evident by a section of a foundered foot, when the cutigeral cavity will be found much enlarged. Guyon, jr., Hertwig, and Gourdon remark that the displacement of the os pedis is counterbalanced by the more rapid development of the heels and the projection of the foot forward; and that thus the phalanx does not support the weight of the body except by its inferior border only, but preserving, nevertheless, its primitive position. It is especially observed that when the foot is completely deformed, the projection of the wall does not prevent the os pedis from remaining in its normal position.

The growth of hoof from the podophyllous tissue and the

coronary band is not easily stopped. The horny masses which are formed continue to increase, and even soon end in uniting. There then remains a thick mass of deformed shape, four or five times thicker than the normal wall, but where the keraphyllous leaves are still noticed, corresponding to the podophyllous laminæ, largely developed, and above all, running deeply into the wall of the hoof. The space between the wall and the anterior face of the os pedis is filled with pus besides the secreted hoof; the seedy toe, if it existed, disappears. Though the hoof becomes thus much more voluminous than before, the deep parts are not any more in their normal condition, but are lodged in a smaller and smaller space, and are thus in such a state of compression that they become atrophied. The bone is altered in its texture, as well as in its form, and becomes denser and more brittle. One might suppose that as the disease progresses, the os pedis would become pressed backwards more and more towards the sole, in consequence of its giving way under the pressure. This, however, is not so. As the old normal walls disappear, the new horn yields to the pressure from forward, the heels rise, the os pedis resumes its horizontal direction, and the danger of hernia of the bone diminishes, and a hypersecretion of the hoof is even noticed towards the point where the hernia would have taken place, in the middle of the pumiced sole.

We have, so far, supposed that chronic laminitis is always manifested by the presence, between the internal face of the wall and the podophyllous surface, of a mass of abnormal hoof. But there are cases, after hemorrhage, and especially after serous exudation, where, instead of it, a cavity is found—a seedy toe. There is also an entire separation between the os pedis and the wall. But the horny production, that of the podophyllous tissue especially, is not sufficient in amount to fill up the whole space, there being hoof only upon the podophyllous tissue. There is then a sound wall formed, separated from the old one by a vacuum, which is often filled by a dry mass derived from the blood and serosity, mixed with the horny cells. But more frequently the separation is limited to the height of the podophyllous tissue, and the wall yet remains adherent to the coronary

band, by its cutigeral cavity. The band then continues to produce the external wall of the hoof, while the podophyllous produces the abnormal wall, and the seedy toe remains between the two walls.

There are cases where the separation, produced by the congestion of laminitis, takes place to such an extent, in circumference or in height, that the hoof loses all its adhesion, except towards the heels; and then one may see the curious fact of the new generation of an entire new nail within the old one, the former being, so to speak, sequestered in the latter.

IV.—*Differential diagnosis.*—It is possible that, notwithstanding its distinctly characterized physiognomy, laminitis, of the hind feet especially, may be mistaken for a disease of the spinal region. Often, when the founder is light, the hinder parts wag, as in sprains of the loins, but the resting of the feet on the heels, their heat and their sensibility, will soon point out the distinction. In more severe cases, the hinder founder may simulate paralysis, especially if the animals cannot or will not raise themselves. Here, the history of the case is very useful, and the explorations of the feet will assist in making the diagnosis. We have seen cases of laminitis behind, where the raising of the foot has been such that it might be taken for springhalt, or even for locomotor ataxy. It may be also taken for tetanus when in mild form, or yet incompletely characterized.

V. *Prognosis.*—Laminitis is so much more alarming and rebellious as to treatment, as it is more extensive, more serious, and of longer existence. The most serious cases are those which are due to a constitutional predisposition, and those which follow a general alteration, or are complicated with other diseases.

Chronic laminitis is especially serious from the production without separation, and in an excessive measure, of the horny substance. Seedy toe is then less serious, and that which does not extend to the coronary band is sometimes curable by the gradual growth of the hoof; the tumor of the os pedis is the most rebellious to treatment. The destruction of patients is often necessary, from their inability to walk or to do any work, and that notwithstanding all treatment they are entirely useless.

(*To be continued.*)

AN INQUIRY

INTO THE ETIOLOGY AND PATHOLOGY OF THE VENEREAL DISEASES OF MAN AND OF THE LOWER ANIMALS.

By Charles F. Ring, M.D.

(*Continued from page* 335.)

Let us now examine for a moment into some of the experiments made in this new disease, for after all experiment—properly conducted—is the touchstone of fact.

Fleming writes: "The disease (lues venereal equinis) is produced only by actual contact of the diseased with the healthy. Inoculation is rarely successful in producing it; Lafosse and many other experimenters have not been able to transmit by puncture, nor yet by rubbing the mucous of the generative organs of an infected into those of a healthy animal; though Hertwig has succeeded once in doing so. Perhaps if the attempts were made at the period of œstrum they would be more successful." (*Ibid*, Vol. 2, p. 330.)

This admission and the results are highly significant, for it will be seen that the opposers of the theory of the transmission of syphilis to solipeds are caught in their own argument, viz.: that *while neither the new disease nor syphilis can be communicated by puncture or inoculation*, yet upon resorting to another method the former disease has been transmitted. This would seem clearly to prove that syphilis also could be communicated in the same manner, and more particularly at the time most favorable.

In recapitulating our views again from the foregoing we feel justified in arriving at the following conclusions:

I. That the local diseases of the sexual organs of solipeds, unlike those of the human species, have ever been considered separated from the constitutional disease, and in this respect much could have been learned from veterinary authors.

II. That there are now no longer any good grounds for justifying a belief in the oneness of the venereal contagia.

III. That the plague out of which ultimated the syphilitic

diseases was not in its inception of a venereal nature, but only became so after a long time, and in the manner described.

IV. That *lues venerea equinis* is a comparatively recent disease, as is likewise human syphilis (which antedates it) and between which there seems to be the most intimate relationship.

V. That theoretically, at least, the etiology of human and equine venereal diseases has been successfully accounted for.

VI. That the argument against the theory of the transmission of syphilis to the lower animals is most inconclusive and weak.

VII. That the existence of a veritable syphilitic disease of the horse is now no longer open to dispute.

VIII. That syphilis is a glanders modified by various circumstances that could not obtain iu the horse, and the new venereal disease of solipeds is a syphilis which often becomes glanders for obvious reasons.

IX. That gonorrhœa and its ally chancroid, being local diseases capable of originating *de novo* without the intervention of syphilitic virus, will ever be present in one form or another in a greater or lesser degree as a disease of the human race.

X. That the syphilitic virus, coming originally from a source foreign to the sexual act, and incapable of spontaneous development in a man, will, unless renewed again from a glanderous origin, gradually grow milder and ultimately become extinct.

The nature of the experiments to be performed to ascertain the soundness of our views must be obvious. If an animal or a human being suffering from either syphilis or glanders be inoculated with the analogous poison, preferably the syphilitic—because it is the milder—and it fails to develop as a *chancre*, after repeated trials conducted by those competent to judge, we may infer that the two diseases are identical, and cannot be inoculated the one into the other.

In bringing our subject to a close, we feel that we have offered no innovation. We accept fully the modern pathology of syphilis, and have taken only a step in advance of the present. Should our effort be deemed worthy of consideration from those who are laborers in this field of study, may our conclusions be

tested after the manner that to them shall seem best suited to confirm or disprove. If this be done, we incline strongly to the belief, that what we have here offered as hypothesis, the future will acknowledge as fact.

THE OPERATION FOR SCROTAL HERNIA OF THE PIG.

By T. B. Rogers, D.V.S.

Practicing in the country, I am often called on to castrate ruptured pigs, and as the method I follow is uniformly successful, perhaps a detail of the operation may be of service to some young practitioners. The common procedure is to open the vaginal sac, remove the testicle, return the intestines and stitch up the wound. The mortality following this rude operation is necessarily heavy, and qualified practitioners will, of course, castrate by the covered operation. It is to some details of this operation that I would call the attention of the profession. To secure a large pig for operation, he should be lashed to a stout plank and the plank slanted up against a wall. Smaller pigs are held head downward by an assistant. Whatever method of securing quiet is followed, the pig should be so secured that he struggles but little. The pig secured, the operator attempts the reduction of the hernia. In small pigs this can usually be done; but in many cases, in large animals, it is a matter of difficulty. If it is reduced, an assistant keeps it back by pressure of the fingers of one hand while the operator cuts through the scrotal skin *as high up towards the tail as is practicable*, leaving the fascia between the tunica vaginalis and skin untouched, to be afterwards divided by a few horizontal touches of the knife. The diverticulum of peritoneum is now exposed, and a little pressure causes the testicle and its envelope to pass out. The operator will now with his thumb nail separate the testicle and tunic from the covering fascia, the other hand drawing the stone upward, and having satisfied himself that there is no intestine accompanying the cord, a needle loaded with double silk is passed through the cord, which is tied in two portions. One of the ligatures, after securing its half of the cord,

is passed round the whole of the cord and the cords (all of them) cut off short. The cord is now cut off as close as possible to the ligature, and the outer wound closed by interrupted suture, leaving but little room for drainage.

I have never lost a pig castrated by this method. The cord is tied in two portions to prevent slipping off the ligature before the peritoneal surfaces are agglutinated, this accident being liable to occur unless a long stump is left. From the closure of the outside wound a considerable amount of exudation (ending in formation of connective tissue) occurs, and this is an admirable preventive of further descent of the hernial sac. An abscess occasionally forms, but I leave it to take care of itself. In large pigs, where the hernia cannot be reduced, the operation is the same. The extra care must be taken to avoid including any intestine in the sutures, and I find that large hernias are gradually reduced by nature after removal of the testicle (in these cases there is not only a very large inguinal ring, but rupture of the abdominal coverings, extending in some cases almost to the umbilicus). What becomes of the ligatures? From the experiments of Spiegelberg and Waldeyer, it would seem that in many cases, after cutting through the outer surface of the pedicle, they are at once encapsulated by approximation of the cut edges, and thus cease to cause irritation. This must often be the case in this operation, as there is frequently no apparent irritation, the wound in the scrotum healing quickly and permanently. The only portion of ligature in the peritoneal cavity is a small part of the silk tying the cord in segments, and here nature protects herself by a folding of peritoneum upon it, so that in twenty-four hours the peritoneal cavity is intact; the ligatures outside the peritoneum. A useful practical lesson may be learned from the method in which the peritoneum, so to speak, protects itself, *i.e.*, that in spaying or rumenotony care should be taken to include the peritoneum in the stitches.

STRANGULATED INGUINAL HERNIA.

By J. C. Meyer, Jr., M.D., V.S.

The October number of the Review contains the report of a case of strangulated hernia, by C. H. Peabody, D.V.S., which arouses my interest in this direction particularly, on the ground of having had a recent case of the same disorder to come under my observation, a description of which I will now communicate in order to urge the necessity of timely surgical interference to rescue the usually valuable property (stallions) that chiefly become the victims of this horrible accident.

September 30th.1882, at 3 P. M., I was summoned to visit a valuable stallion at Erlangen, Ky., that had been driven on the preceding evening from Covington, Ky., a distance of nine miles, for the purpose of preparing him for fairs. He arrived at the designated place at 7 P. M., when he exhibited abdominal pains for the first time in his life, having attained the age of six years. The trainer administered what he considered appropriate in the treatment of a case of colic during the night and until noon of the next day, when he recognized his failure to manage the case.

After preparing myself with instruments, etc., I reached the patient at 5 P. M., when I found him standing in a box stall, his head elevated, with an anxious expression, his body covered with cold perspiration and trembling. He was moving forward and backward in a staggering manner. Eructations of gases and food from the stomach were observed. His pulse numbered 110 per minute and faint, his respiration rapid, and temperature 103. I had his left hind limb abducted, so as to allow an easy manipulation of his scrotum. The scrotum was shriveled up, covered with a cold, clammy sweat. His left spermatic cord was of a natural size; the right, on the contrary, was enlarged, firm and painful on pressure. This furnished suspicious evidence of strangulated hernia. I then made a rectal examination and found the pelvis well filled with distended small intestines, one portion of which extending into the inguinal canal and being firmly held there. Owing to the distended condition of the bowels, it was impossible to handle them with a view of extricating the constricted portion, so I procured a short aspirator

needle and (per rectum) punctured the distended bowels, giving rise to the escape of gases and bloody serum, thereby diminishing the volume of the intestines to a considerable degree. The discharge of bloody serum through the tube indicated a far advanced gangrenous state of the bowels, and I then practiced taxis with the left, and with the right hand endeavored to extract the pinched knuckle of intestine, but to no purpose. The animal apparently approaching death rapidly, I desisted from any further attempts to reduce the hernia and made a fatal prognosis.

Death ensued about fifteen minutes later in my presence. I immediately made an autopsy, which verified my diagnosis. Opening the left testicular coverings, a flow of serum followed of a reddish color but containing no intestines. Exposing the right testicle also caused a discharge of bloody serum. Enlarging my incision upward toward the inguinal canal, I discovered a coil of intestine about four inches long protruding from the abdomen. This portion of intestinal tube was of a mahogany color, greatly congested and thickened, but nowhere was it found to be in a sphacelated condition. The line of constriction was sharply defined. Small intestines contained a large quantity of bloody serum throughout their whole extent.

There is of course nothing of any interest in the occurrence of strangulated hernia, but there is in the operation for its relief, which I, to my regret, have not as yet had an opportunity to perform.

The greatest importance is attached in diagnosing the case before the strangulation has caused irreparable damage; that is, the impairment of the vitality of the protruded bowel that it could not recover itself. It is my belief that in the vast majority of cases, if seen immediately after the occurrence of strangulation, reduction can be effected by manipulation without much trouble, but as time elapses it becomes more and more difficult of accomplishment, simply because the parts are becoming more engorged every moment. If failure attends this method after reasonable trials, herniotomy ought to be resorted to at once. I am thoroughly satisfied that long-continued and violent attempts to effect reduction by manipulation often destroys the only chance remaining, and to wait for a spontaneous reduction is haz-

ardous in the extreme. As stated above, I never performed herniotomy for the relief of strangulated inguinal hernia, but have had three cases where this procedure might have been brought into requisition if the cases had not been too far advanced to accomplish any good by the operation. My post mortem observations have taught me to make the incision along the anterior border of the spermatic cord coverings without exposing the testicle. By so doing the ring is more easily reached; moreover, in my opinion, it guards against the possible prolapsing of a great mass of intestines during struggling after the ring is enlarged. To obviate struggling to a great extent, which is very essential, a round dose of chloral hydrate (ʒ iss), as advocated by Dr. Corlies, for operations in general, is of valuable service. Even the administration of chloroform or ether may be judicious, but horses struggle almost as much during the inhalation of these agents as they do while undergoing the operation without them. However, I do not want to disparage the usefulness of these anæsthetics. Of course the manner of the operation for the relief of strangulated inguinal hernia is understood by all regular practitioners, and without having any new suggestions to make, I deem it unnecessary to describe it. A few words in connection with securing such patients. From my experience in operating upon cryptorchids, I will state that by drawing the upper hind leg forward and securing it to the neck, an extra hobble being placed above the hock joint of the same limb, with a long rope attached to it, which is thrown over a joist or limb of a tree, as the case may be, and drawn tight, in addition to the propping up of the horse on the other side with bags of hay, is a convenient method for the operator to employ in performing herniotomy.

PHYSOSTIGMINUM,

AN EXCELLENT REMEDY IN COLIC, OVERFEEDING AND DYSPEPSIA.

By R. S. Huidekoper, M.D., V.S.

Professor W. Dieckerhoff, of the Royal Veterinary School at Berlin, publishes in the September number of the *Wochenschrift fur Thierheilkunde und Viehzucht* the results of his discovery of

a most valuable remedy for employment in veterinary practice.

The following is a brief resumé:

Physostigminum (Eserin) is derived from the calabar bean.

Physostigminum has a special action on the intestinal muscles, and exerts, in a prompt manner, a lasting excitation of them.

Basing his idea upon this physiological action, Professor Dieckerhoff resolved to make experiments with the alkaloïd in cases of overfeeding and in acute and chronic dyspepsia (gastrosis) of horses.

He found no difference in the action of the sulphuric and the salicylic salts.

He employs the crystallized *physostigminum sulfuricum.*

This dissolves readily in cold water, forming a bright yellow, clear fluid.

The solution employed subcutaneously excites no inflammatory action.

The instillation of an aqueous solution (0.01—10.00 grm.) in the eyes of horses, produces in an hour contraction of the pupil, which disappears in twenty-four hours.

No contraction of the pupil was observed in the experiments by *subcutaneous* and *intravenous* injection; on the contrary, after large doses, always transitory dilatation.

By intravenous injection the action of the remedy is much more speedy and more powerful than by subcutaneous injection.

For the intravenous injection, the vein is distended by being compressed, and a moderate sized hypodermic needle inserted with the point up.

The escape of blood shows that the needle is properly applied.

The small puncture closes itself.

It is best to use a syringe of size sufficient to allow the entire quantity to be injected at once.

After a full dose of physostigminum sulfuricum is injected into the circulation, only two or three minutes pass before its action begins.

The following symptoms are presented:

Restlessness, muscular twitchings, especially of the shoulders and croup; more marked contractions of the extensors of the hind legs; unsteadiness of the body; light colic; sweating; fre-

quent and difficult respiration; at times marked dyspnœa, sometimes gaping; salivation and continued licking with the tongue; in some cases an inconsiderable elevation of temperature; increase of *peristalsis* during one to two hours; lively intestinal murmurs, audible at several paces; copious voiding of intestinal gases and excrement; the excrement changes later to a pap-like and often to a fluid consistency.

The introduction of greater (toxic) doses into the circulation, induces tetanic contractions of the extensors of the hind legs, tetanic contraction of the intestinal muscles, groaning from the pain, great debility and transitory relaxation of the sphincter ani.

When a full dose of the remedy is applied *subcutaneously*, the first symptoms are observed in twenty to forty minutes.

Slight trembling of the skin at the point of injection, and later over the whole body; repeated gaping, active peristalsis, repeated voiding of gas and excrement, which continues for about three hours; increased salivation and continuous licking.

Frequency of respiration and dyspnœa, as well as elevation of temperature, generally lacking after the *subcutaneous* injection, or are but trifling.

In many horses, small doses injected subcutaneously have no perceptible effect; in others, peristalsis becomes more active in about an hour, and in two to three hours the horse voids a large mass of excrement.

The action of physostigminum extends over the whole intestinal tract.

As the remedy in suitable doses has no excessive action, it is especially fitted for the treatment of grave stomach and intestinal disorders of horses and cattle.

It is evident that physostigminum should not be used where the intestinal muscles have lost their excitability in the colics due to impacted matter or great meteorisation.

The dose of physostigminum sulfuricum is, according to Professor Dieckerhoff's experiments, from 0.04 to 0.10 grammes, according to the size of the horse.

A one per cent. solution is the most suitable, either for subcutaneous or intravenous injection.

On account of the more severe action after the intravenous injection, veterinary practitioners will do best in employing the subcutaneous injection, in which the larger doses are better supported.

In very large horses it is sometimes permissible to exceed the maximum (0.10 grm.) dose.

At times an animal, from idiosyncracy, will support a larger dose than others of the same conformation.

In September, the clinical report of a number of cases was published, and since that time Professor Dieckerhoff has employed the remedy almost daily, with increasedly satisfying results.

In the only cases in which it has failed to effect a cure, auscultation of the abdomen showed absence of intestinal murmurs, and the autopsy revealed a volvulus or rupture of the intestine.

With no other remedy can the excitation of peristalsis (the *indicatio-morbi* in the ordinary diseases of the intestines) be so sureiy and safely effected.

Its advantages lie in the quickness and surety of its action, the ease of application, and the absence of danger or the disturbance of other organs.

It will undoubtedly sometimes be advantageous to combine its use with the internal exhibition of neutral salts, or laxatives, or with injections into the rectum.

EDITORIAL.

ARMY VETERINARY RESIGNATIONS.

Within a year four graduated veterinary surgeons in the army veterinary department have resigned their positions. In a department constituted of but fifteen members, this is a heavy percentage to lose in so short a time. The cause of these resignations appears to be the same in each instance—poor pay, no rank and no chance for promotion. Of the fourteen regimental veterinary surgeons allowed to the cavalry by law, ten receive $75.00 a

month, and four $100.00 a month. Their allowance:—quarters, fuel, etc., are but little better than nothing, and certainly preclude the probability of a married man accepting them and the position. There is no use trying to ignore the fact that the veterinary surgeons of the army are not properly treated. It is not right to expect of a member of the profession that he shall give his services for the same renumeration as is paid the shoeing-smith, the wagon-maker and the poorest mechanic. It is highly detrimental to the best interests of the animals in the public service, that the position of veterinary surgeon is so surrounded by unbearable conditions that it cannot retain the services of any self-respecting graduate in veterinary surgery. The order of March 27, 1879, providing for the appointment, in the future, of graduates only to army positions, was a good one, in so far as it went, but it needs to be supplemented by a provision of Congress, making the veterinary surgeon a commissioned officer, with sufficient pay and rank to maintain a respectable appearance, and to attract members of the profession, of at least average ability. The way matters now stand, the army will soon be without veterinary surgeons, or with those that are worse than none, for there are graduates in this country, no doubt considered elegible to army appointment, who, as veterinary surgeons, are unworthy of any trust. The interests at stake demand the establishment of a veterinary department, that shall have at least, a reasonable opportunity to prove its efficiency, and it cannot be acomplished too soon.

NUMBERS OF THE REVIEW WANTED.

We will be thankful to any of our subscribers for any duplicate numbers of the REVIEW. We have received several inquiries for missing numbers from persons who have incomplete volumes, and regret that we are unable to supply them. We have also an offer of ten dollars for the first volume of *Fleming's Veterinary Journal.*

CLINICAL CHRONICLES.

By A. Liautard, M.D., H.F.R.C.V.S.

The magnitude of the responsibility of the veterinarian when called upon to perform surgical operations is probably not sufficiently understood nor appreciated either by the owners of animals or even, sometimes, by the young practitioner, who often, in his desire to secure for his record an opportunity to operate, forgets to advise his employer of the dangers to which his animal is about to be exposed, not only by the operation itself but also by the manipulation of the means of restraint which he may be obliged to employ. It is in that responsibility that the duties of the veterinary surgeon become equal, if not superior to those of the human surgeon. When the latter has an operation to perform he has his patient brought before him and placed under the influence of ether or chloroform, and there is for him but little danger of accidents resulting either from moral influence or from the struggles of his patient. The veterinarian, on the contrary, has seldom occasion to have recourse to perfect anesthesia, but very often is obliged to secure his patient in such a manner that by his movements the operation is not rendered more difficult, or the life of the operator or of his assistant endangered. Large animals have to be cast, and in that position, though their movements and struggles are somewhat limited, they are not so perfectly secured that they cannot inflict upon themselves severe injuries, either to the soft or hard tissues. Amongst the most serious accidents likely to occur is that commonly known as broken back, or fracture of the vertebral column. When this accident takes place (and it may, notwithstanding the greatest caution having been employed) the post mortem examination generally reveals a fracture of one or several of the vertebræ. The fracture which is most commonly met with is at the forward part of the dorsal region, the seventeenth or eighteenth dorsal vertebra being the seat of the lesion, while again, it may go as far back as the lines where the first or second lumbar vertebræ are fractured. The following case, recorded by M. F. Hanshew,

student at the American Veterinary College, illustrates one of these cases, where the animal to which the accident occurred had been thrown with all the care possible, having upon him the halter and surcingle recently introduced in veterinary surgery by Bernadot and Butel,* and to which an ounce of chloral hydrate had been given some time before the operatian was begun.

COMMINUTIVE FRACTURE OF THE THIRTEENTH DORSAL VERTEBRA.

By T. J. Hanshew (Student).

Sorrel mare, 9 years old, 16 hands 1 inch high; full mane, bang tail; entered in the hospital November 2nd, with the following history:—

She was used as a hunter, and had, in jumping, injured both fore legs. She is quite lame on the off fore leg. Her condition is as follows: Both fore cannons are much swollen, the suspensory ligament is much thickened; there is partial laceration of the tendons which pass behind the metacarpal bones, and she had extensive tendinous windgalls, principally on the off leg.

Though the prognosis was rather unfavorable, and it was very doubtful if she could ever resume her work as a hunter, it was decided to have her fired, and if possible have her returned to a certain amount of usefulness. On November 3d, after receiving a large dose of chloral, attempts were made to operate on her standing up, but being of a high strung, nervous temperament, she would not submit to the application of the actual cautery.

The owner having consented to assume the responsibility in case of accident, she was cast on her off side, the Bernadot and Butel apparatus placed on her, and though she struggled violently, was fired on one side of the off fore leg, and turned over without difficulty and operated on upon the other side. Toward the last of the operation the struggles had subsided.

On removal of the blanket with which she was covered, there was discovered a profuse perspiration and trembling of the hind quarters. Her temperature was 98°, the pulse had become intermittent, the respiration somewhat hurried, and she had lost all

---

*See A. V. Review, Vol. V., page 29.

sensation and motion of her hind parts from the middle of the dorsal region backwards. The hobbles being removed, the animal raised her head and fore legs, struggled once to get up, then turned her head back, looked at her hind extremities and fell back in a prostrate position. There being no doubt as to the injury she had inflicted upon herself, her owner was notified, and by his consent she was immediately destroyed.

The *post mortem* showed a comminutive fracture of the thirteenth dorsal vertebra, the body of the bone being crushed into several pieces, with an oblique fracture of the annular portion, extending upwards about an inch above the spinal foramen. The spinal marrow corresponding to the seat of the fracture was almost divided, crushed as it had been by the fragments of the bone, the continuity being kept up only by its outside fibrous covering the dura mater. The fourth lumbar vertebra showed a large bony exsostosis upon the body of old standing. All the other organs were healthy. The mare was a long-loined animal, with a somewhat narrow belly.

The regularity with which the dental apparatus develops itself in the buccal cavity is sometimes subject to various changes, either in the number of the teeth, their mode of development or their way of growth. Numerous cases are recorded where the incisors and molars have presented peculiar abnomalies. Double rows of teeth; variations from the regular number; their development in parts of the head where the dental follicle has been carried by a peculiar mode of traveling, so to speak; their presence in the structure of the temporal bone, or in the aufractuous cavities of the sinuses; all these can be found in some of the special works on equine dentistry. We remember a peculiar case where a supplementary seventh molar tooth, situated in the lower maxillary, has given rise to peculiar symptoms of disease which ended fatally. The following case, which was presented to the clinic of the American Veterinary College through the kindness of Dr. John Dougherty, will prove most interesting, not only on account of the number of molars which existed in both jaws, but

in the peculiar way the teeth were worn, the peculiar interference it had with mastication and the diseased condition of some of the bones of the face, the maxillary and the palate bones.

ABNORMAL DENTITION—IRREGULAR WEARING OF THE MOLARS ON ONE SIDE OF THE HEAD—NECROSIS OF THE MAXILLARY AND PALATE BONES.

By Mr. T. S. Denslow (Student).

At the clinic of the American Veterinary College, an interesting case of abnormal dentition, in which *forty-four teeth* were found in the buccal cavity, was presented before the students.

The animal was a chestnut gelding, 17 hands high, used for heavy draft, with a mouth showing the characters of an eight-year-old horse, but was much older. The incisors could not meet by a distance of at least five lines. Prof. Liautard recognized him as an old patient of his, one which he had attended to several times for the last twelve or fourteen years, he having been obliged to file his teeth several times in order to enable him to grind his food. The history obtained was that some six months ago he had numerous enlargements along the lymphatics of the head, which subsided; that he had passed bloody urine at some various periods, and had also discharged blood from the nose. When presented at the clinic, he seemed in poor condition; there was a very offensive discharge through the nostrils, slightly bloody, not sticky but somewhat adherent. When the mouth is opened there is an offensive odor of caries discerned at some distance from the patient. The mucous membrane of the nose is sound; the lymphatics of the intermaxillary space are swollen and painful. On opening the mouth, the molars of the left side presented a very peculiar abnormal aspect, their crowns not being opposed to each other, but the rubbing of the teeth taking place from the sides, that of the outside for the lower, and that of the inside from the upper teeth. The teeth were considerably overgrown, and their disposition was such that the jaws could only move vertically, no lateral motion being possible; prehension was very difficult, the animal grasping only a few blades at a time.

Mastication was very painful, as it could only occur on the off-molars, and deglutition was interfered with by the median position of the posterior molars, preventing the freedom necessary at the base of the tongue, where a loose rattling or crepitation could be heard.

In the presence of the condition of the patient, the excessive growth of the teeth and the diseased condition of the maxillary bones, a most unfavorable prognosis was given, and the animal, abandoned by his owner, was destroyed.

Post Mortem Examination.—The muscular structure of both cheeks being cut through, the lower jaw was separated from the upper, and the following unique lesions exposed: The mucous membrane of the buccal cavity offers numerous severe excoriations, especially toward the roof of the mouth, which is much lacerated by the sixth molar, while within a short distance of the median line, there is a seventh supernumerary molar (both of which were so loose that they fell out on the slightest traction.) They had punctured a hole through the palate bone into the nasal cavity, through which food found its way into the air passage. This seventh molar was three inches long and had an additional curious fang, nearly out, long, loosely held in place, and moving at every motion of the inferior maxillary bone. The last alveolar cavity had a large necrosed hole in the bone, due not only to the disease of the bone, but to the leverage exerted by the superior molars, which were grown down. This cavity contained about eight ounces of imperfectly masticated and decomposed food.

Each dental molar arch contained seven fully developed molars.

After boiling, the incisors were found curving straight forward, then bending slightly downward, and were very much elongated. The palatine bone had a triangular notch necrosed on its border, a little to the left of the median line, with a rough and irregular border. The bones of the forehead are much softer and when dry are easily broken, on account of their brittle condition.

EXPERIMENTAL PATHOLOGY.

DIE ŒTIOLOGY DER TUBERCULOSE (ETIOLOGY OF TUBERCULOSIS).

By Robert Koch.*

In a first series of researches, the author has tried to find the parasitic cause of tuberculosis. After satisfying himself of the deficiency of the coloring processes in use for histological elements, he accomplished positive results by the following method: The microscopic preparation is placed in a coloring solution made of 200 grammes of distilled water, mixed with one cubic centimeter of a concentrated alcoholic solution of the blue of methyline, to which are then added two cubic centimeters of an alkaline liquid, for instance, of potash to the tenth. This mixture must not make any precipitate, even after several days' rest. They are afterwards placed in a concentrated and filtrated solution of vesuvine, and left in it from two to twenty minutes, whether it is a piece of glass upon which has been stretched and dyed a preparation in a fresh state, or, on the contrary, a section hardened in alcohol. The preparation is washed with distilled water, the excess of water is removed with alcohol, and the preparation cleared off with the essence of clover. The specimens can then be immediately examined or mounted.

The treatment with the vesuvine has for its object to remove from the preparation the excess of blue coloration coming from that of methyline to transform this, saturated in a slightly brownish blue.

If this method is carefully followed, all the histological elements, especially the nuclei and their products of desegregation, appear brown under the microscope, while the tuberculous bacteria are of a handsome blue. The contrast is such that these are easily distinguished, even when in small numbers and apart.

Koch has tried this mode of coloration upon a great number of other bacteria, and all are tinted brown, except those of lepra, which has a strong resemblance to those of tuberculosis. However, the leprous bacteria are finer, pointed at their extremities,

* Berlin Klin. Wochens.

and contrary to the bacteria of tuberculosis, are colored with the liquid of Weigert. The bacteria of tuberculosis are very small, and of a length which ordinarily varies from one-quarter to one-half of the diameter of a red corpuscle; seldom do they reach a length equal to the diameter of the corpuscle.

They are found in abundance in all the parts where the morbid process is recent and progresses rapidly. They are also often seen, grouped in fasciculi, in the interior of the cells, as in lepra, but there are besides always some free, especially on the edges of the large caseous collections.

When the height of tuberculous eruption has subsided they become more rare, and are entirely missing only where the morbid process has ceased.

When tuberculous tissues contain giant cells, it is in their interior that bacterian rods are better found; it is even the only place where they are ordinarily, when the tuberculosis progresses slowly; they collect principally in the youngest giant cells.

Without any preparation or coloration, bacteriæ may be seen, providing the parts examined contain plenty, such as the grey granulation from the lung of a guinea pig which had died with inoculated tuberculosis. It is sufficient to add to the piece of granulation a little bloody serum to examine it in a deep porte-object, to avoid the motions of the liquid. The bacterias then have the aspect of very fine rods, with a purely molecular motion, without any trace of movements proper.—*Revue des Sciences Medicale.*

PATHOLOGICAL PHYSIOLOGY.

AWAY TO GIVE IMMUNITY AGAINST SYMPTOMATIC OR BACTERIAN ANTHRAX WITH ATTENUATED VIRUS.

By M. Arloing, Cornevin & Thomas.

We have succeeded in giving immunity against symptomatic anthrax by inoculation of the natural virus into the veins and in the tracheo-bronchial canals. Intra-venous injection has even been applied upon a large scale, and its efficiency confirmed.

To-day we desire to call attention to a new way to reach the same result, by injecting under the skin attenuated virus.

a.—The mode of attenuation which we have regulated and applied was suggested by the works of Mr. Toussaint upon the bacteridie of splenic apoplexy (sang de rate) which have been reconsidered lately, with brilliant success, by M. Chauveau. Indeed, it consists in the action of heat upon the virulent serosity taken from carbuncular tumors; only, this serosity is first dried at the temperature of 32° in a current of air sufficient to obtain the desiccation before the beginning of putrefaction.

A long series of experiments has shown us that in triturating a certain quantity of virus, dried in the above named condition, with twice its weight of water, so as to evenly hydrate all the particles and in carrying off these mixtures in an oven heated from 85° to 100°, where they are left for six hours, a series of virus, attenuated at various degrees, is obtained. It is important to attenuate only a small quantity of virus at once, and to regulate the heat of the oven in such a way that its initial temperature may be re-established in less than two hours after the introduction of the virus.

b.—When it is desired to employ the virus attenuated by this process, a choice must be established, based upon their activity and the specific or individual susceptibility of the subjects upon which they are to be used; and to fix the dose for a subject accordingly. The dose has, indeed, a great influence upon the result. Thus one may produce a slight disease and vaccinates; another, and stronger, may give rise to a fatal tumor in which the microbs regain all their activity.

After some hesitation, we have adopted the following practice: We make two inoculations, six or eight days apart, the first with virus attenuated by a temperature of 100°; the second with a virus heated at 85°. The use of the less attenuated virus might be followed by failures, even upon cattle. For sheep, we take 0 gr. 01 of each virus in a dry state; for cattle, from 0 gr. 02 to 0 gr. 03, according to the size. These doses are mixed with one hundred times their weight of water and crushed in a mortar until a mass suitable to be injected under the skin is obtained.

Until the present time we have made the injections under the skin of the lateral face of the neck, and of the internal face of the neck. The animals were re-vaccinated after two weeks, with six drops of serosity, fresh from a tumor, and mixed with one cubic centimeter of water, to facilitate the inoculation.

c.—So far, we have used the attenuated virus in three series of animals, viz., one lot of three sheep, one of three calves, and a third of a heifer of 18 or 20 months old, and a cow of four years. In bovines the inoculations have produced a slight local tumefaction, which disappeared by degrees; in sheep, a large swelling. The first inoculation was followed by an elevation of temperature from 0.2 to 0.7; the second, an hyperthemia from 0.5 to 1. Sometimes the higher elevation was noticed after the first inoculation. All these animals were vaccinated with success. Inoculated at the same time with others, kept as witnesses, with natural virus, they presented slight and insignificant accidents, while the others had severe and almost always fatal sequelæ.

We may notice the great resistance of the microbe of symptomatic anthrax to heat, after a first graduated desiccation at 32°. We have observed in the same condition an analagous resistance to the action of the antiseptics. It is proper to observe, at the same time, that virulent serosities contain specially sporulated batonnets and that their number increases very much pending the duration of the first operation, so that the heat acts upon a virus very rich in spores. These observations served us as guiding ideas in the researches which we have just disclosed.—*Gazette Medicale.*

REPORTS OF CASES.

A CASE OF DISTOKIA IN A MARE—DORSO-SACRAL PRESENTATION—LACERATION OF THE PERINÆUM—RECOVERY.

By J. B. Galt, V. S.

A messenger came to my house early one morning and said that he had a mare that could not foal, and he thought she was about dying. I hurried to see the patient, as she was a valuable animal. Arriving at the place I found the case to be one of distokia. The mare was down on her right side, unable to rise or to

use her hind parts at all. The vulva was enormously swollen and congested. On inserting my arm up the vagina I found that the muzzle of the fœtus was about six inches from the external opening of the vulva. The presentation of the fœtus was dorso-sacral, with the left fore leg over the back of the occipital bone, cross-wise, and part of it in the vaginal canal. I at once straightened out the leg, put torsion cords on each fore pastern, and slipped a noose over the head, handing the cord to two assistants, with directions to pull when I gave the word. When every particular requirement for the retraction was made and ready, the traction was made on the cords, the fœtus yielding. After a few seconds delay, the fœtus was brought away, followed by the envelopes, with a large quantity of fluid. The colt was dead, but of full term. After delivery, the mare laid extended at full length, with all four legs straight and stiff. The pulse was very weak, the temperature low; in fact it was a desperate case. The animal was placed under stimulants, the vaginal canal washed out, and after six hours the mare was raised by six assistants; but unable to stand, she was allowed to lie down, and the same treatment continued. The following morning, found her in about the same condition. She was put in slings on the third day. At that time there was a strong odor coming from the vulva, which was considerably swollen. I punctured the right and left walls of the vagina, and directed carbolized lotions. She remained in about the same condition for several days, but at last her appetite began to return, her countenance improved; pulse became stronger, and she stood better in the slings. On the 11th day after delivery the labia sloughed off, with portions of the mucous membrane of the vagina, leaving, with the laceration of the perinæum, already existing, a ghastly opening. The perinœal laceration was treated by sutures and zinc lotion, and the parts kept clean by carbolized washes. On the sixteenth day the mare was taken out of the slings and allowed to move about, but being found very weak, was returned to them and remained there for a week longer, after which she began to rapidly improve, and to-day, after two months of a tedious convalescence, has made a full recovery and has resumed her work.

CHLORIDE OF SODIUM INJECTIONS IN VENTRAL HERNIA.

A. A. HOLCOMBE. D.V.S.

In March, 1882, I was asked to treat a case of ventral hernia in a colt, ruptured by being caught on the end of a sharp picket as he was leaping a fence while a yearling. A few months after the accident a farrier attempted to reduce the hernia by introducing a seaton; bnt the tumor became larger instead of smaller. The enlargement was about the size of a man's fist, and seemed reduciable by pressure. It was determined to try to effect a cure by means of injections of chloride of sodium in solution, which, it was believed, would reduce the hernia and permanently close the sac by the infiliation it would cause; accordingly the animal was put on small doses of tiucture of arnica for a few days, so that the tendency to inflammation might be diminished, and preparation made for casting by emptying the bowels with an eighteen hours' fast.

When the animal was cast he was placed on his back and an effort made to empty the sac, but this was not possible owing to some adhesions between the omentum and walls of the sac near the opening in the abdominal wall. These adhesions were probably the result of the seatoning whieh had been done two years before. Seeing that the sac could uot be emptied, except by opening it and breaking down the omental adhesions, it was decided to make the injections with the hope that the resulting infiliation would reduce the hernia as much as possible, and by closing the abdominal opening around the omentum, prevent its further protusion. Accordingly, four injections, at opposite points, were made of ten drops of a saturated solution of chloride of sodium, and the hernia held in reduction by means of a pad and broad bandage. No result whatever followed these injections, so they were repeated in about two weeks' time without casting the animal, and with fifteen instead of ten drops of the solution. Within twelve hours considerable swelling took place around each point of injection, which by the third day included the entire tumor in a very firm infiltration. The enlargements were tender to pressure, while the respirations were increased in frequency, the heart beat at 50, and the temperature went up to 105°

In about a week the tumor began to diminish in size, and a small abscess formed at one of the points of injection. This was opened, washed out with a weak solution of carbolic acid, and left to heal. Two weeks after the operation the tumor had regained its usual size and consistency, but the opening into the abdomen could no longer be found. The animal was now turned to grass, and I heard no more from him until to-day, when I learn he died about a month ago. A post-mortem examination, made by a farrier, is said to have revealed a tumor in the small intestine, at the point where the omentum was attached to the sac, nearly large enough to close the canal. The patient ran down in condition from the time of the operation until his death.

THE DISSEMINATION OF TEXAS FEVER, AND HOW TO CONTROL IT.

Hon. Geo. B. Loring, Commissioner of Agriculture:

SIR: In accordance with your directions, I respectfully submit the following considerations in regard to the dissemination and prevention of splenic or Texas cattle fever, which have been suggested by Dr. Miller's report of outbreaks in Ohio and West Virginia.

In the first place, I would call attention to the fact that this is a disease with which the veterinary profession is not very familiar. The outbreaks, though frequent, have generally occurred in the Southern, Southwestern, or Western States, in localities where, until very recently, there have been no veterinarians; and when these have happened at the North, the course of the disease has been so rapid that the professional man has had little opportunity to study its peculiarities before it had exhausted itself by the death of all the susceptible animals exposed to it. As a consequence, members of the profession at large have not those clear ideas in regard to its origin, its dissemination, and the best means of suppressing it which we should expect had they been for a longer time in contact with it. And for this reason, while the veterinarian who has had little experience with it may recognize it at once by the symptoms and the post mortem appearances, we

cannot expect him to be as reliable a guide for the measures to be adopted in controlling the plague as would be the case had he watched and studied it for years.

The quarantine of sick animals and infected grounds is so generally applicable to infectious diseases as a class, and has been our chief reliance for so long, that it is not surprising to find it advocated for an affection like Texas fever, which has the same general characters, even though there are peculiarities in regard to it which may render this measure, as generally applied, inexpedient or plainly objectionable. We must not forget, however, that the owners of sick cattle and infected grounds have certain rights as well as the public at large, and that while it is our duty to assist the public in protecting itself by advocating such regulations as are necessary for accomplishing this end, it is equally our duty to be certain that the regulations proposed are necessary, and that they do not bear unduly upon the already suffering parties, or restrict the business of the community further than is absolutely essential.

To make it plain, therefore, what steps should be taken by the local authorities in the case of such outbreaks of Texas fever as have recently occurred in Ohio, West Virginia, New York, and other States, where there is no permanent infection with the germs of this disease, it is necessary to enter into some details concerning the spread of this infection.

HOW IS TEXAS FEVER DISSEMINATED?

Those who have had much experience with Texas fever, who have watched the outbreaks in the Northern States, who have followed its ravages along the border line of the permanently infected districts, and have studied it in its native haunts, are practically unanimous in their conclusion that the Southern cattle may only be separated from susceptible ones by a board fence, or that they may even occupy the same stable for an indefinite time without causing the least appearance of the disease. There is equal unanimity in the conclusion that if these susceptible natives are placed upon grounds, even though these be roads, yards, or commons to which the Southern cattle have had access within two,

four, or six months, they are liable to contract the disease in its most virulent form. On the other hand, it is believed that the sick natives have never conveyed the disease to other susceptible animals either directly by contact or indirectly through the atmosphere or by infecting the pastures on which they run. Having frequently seen sick animals in the same lots with susceptible well ones, and having injected considerable quantities of the blood of recently dead animals beneath the skin of susceptible cattle without any transmission of the disease, I am perfectly convinced that this opinion is correct, and that the sick native animals are in no sense a source of the infection.

In regard to the danger of the disease being spread from the dead carcase we cannot be so certain. My investigations indicate that the germs of the disease exist in the spleen and liver, and it would not be unreasonable to suppose that these organs carried about by dogs or other animals might in certain cases be the means of infecting other pastures. We do not know, however, that this has ever occurred.

The real danger, then, exists in the pastures or other grounds over which Southern cattle, whether sick or well, have travelled, while the sick natives are harmless.

The Southern cattle which convey the infection do not, as a rule, contract the disease, but this rule is not without exceptions. The germs of the disease are within their bodies, probably in their digestive organs, possibly, also, in the liver and spleen, and though when in a vigorous condition they are insusceptible to the influence of these germs, when exhausted by the hardships of travel they frequently succumb to them. There is, consequently, a distinction to be drawn between the sick native animals and those from the South which have sickened; the former do not infect pastures, the latter in all probability do infect them.

We must not expect to find these facts accepted by all who observe this disease, however; on the contrary, they are frequently contested, and nowhere more emphatically than along the border line of the permanently infected district, where the disease is most common, and where it is most important that they should be understood. The experienced sanitarian will not be surprised

at this; he knows that the same is true with all communicable diseases, and that it is precisely where these are most common that there is the greatest doubt as to the manner of their origin and dissemination. Every unbiased man is ready to admit, for instance, that pleuro pneumonia never occurs in this country unless it is contracted from a previously sick animal, because the disease was never known here before it was imported from Europe, and because it never occurs now beyond the area obviously infected, except by contagion. And yet, when we consult the people of the infected districts, we find that many are emphatic in their assertions that the disease occurs spontaneously as the result of certain conditions of the atmosphere or food, and that it does not arise in all cases from contagion. The reason is very plain. The contagion is so generally disseminated that it is impossible to trace a large number of the cases to their origin, and they are, consequently, accepted as spontaneous. If we go to France, we find a still more general acceptance of the opinion that this disease arises spontaneously, and this is even shared by many members of the veterinary profession. But as the disease is becoming more circumscribed, and as greater efforts are being made to trace the origin of the outbreaks, the profession, at least, is gradually becoming convinced that it only arises by contagion from pre-existing cases.

Along the border line for miles beyond the district permanently infected with Texas fever, every road and common is infected in early spring by the continuous movement of cattle, and it is not surprising that many outbreaks of the disease can never be traced to their source. So, too, in many cases where Southern cattle are carried farther North, an unsuspected road or common is infected, and it long remains an unsolved mystery how the native cattle contracted the disease. Again, people frequently forget that foreign cattle were on their roads and pastures, it may be, three to five months before the outbreak of the disease; they are almost as likely to forget that their own cattle have been on certain roads or pastures within three to six weeks; they even forget that they have purchased cattle lately enough to cause the infection, and in all these cases they will assert most

positively that their cattle have had no opportunity to contract the plague in the ordinary way, and that, consequently, it has been carried through the air or has originated spontaneously. A careful investigation, however, generally discovers the infected grounds and the cattle which have caused them, and then every one is surprised that that had not been thought of before.

I mention these facts to show the necessity of the greatest caution in accepting explanations of outbreaks as valid which apparently contradict the great mass of facts bearing on this or any other contagious disease.

Turning now to the outbreak in Ohio investigated by Dr. Miller, we find that both lots of cattle were purchased in the St. Louis stock-yards, and that at least one lot was represented to have been purchased in Southwestern Missouri. Lot No. 1 may have been infected when purchased in St. Louis, or, what is equally probable, it may have been a mixed lot of animals—one or more coming from an infected district, while the others were from farther North and susceptible to the disease. They could not have all been from an infected district, for in that case there would have been no deaths except during the first week after their arrival, when exhausted by the journey. If none were from the infected district, and the infection was contracted from grounds on which they had been yarded during the journey, then the pasture on which they died would not have been infected. There seems to be no data whatever for deciding this point.

In regard to the second lot, the impression conveyed by the report is that they were infected by driving lot No. 1 along the road adjoining their pasture. Considering that the infection has never been positively known to have crossed a fence, I think a more satisfactory explanation is possible under the circumstances. This lot, like the other, being purchased in the St. Louis stock-yard, was very likely composed of some animals from an infected district, and others which were from uninfected localities and consequently susceptible. Indeed, if all had been susceptible we should have expected that a larger proportion would have contracted the disease. The fact that they did not sicken until after

the first cases occurred in the other lot does not bear against this view, since it is a matter of common observation that the disease frequently does not occur until a certain season of the year, no matter how long the pasture has been infected. Thus, cattle taken upon infected pastures in early spring do not as a rule show any symptoms of the disease until August, while those put upon the same pasture in July very often sicken as soon. So that, if each lot had contained one or more animals capable of infecting the pastures, it is not surprising that the disease occurred about the same time in both cases, though one had been upon its pasture a month longer than the other.

In West Virginia the Southern cattle seem to have been divided among a number of farmers, and consequently there must have been abundant opportunity for the infection of roads, commons and pastures. While, therefore, the owners of some of the diseased native cattle may have believed that these had not been upon infected grounds, it is altogether probable that, as has happened in so many other cases, either the owner was not cognizant of all the wanderings of his cattle for the preceding three or four weeks, or that grounds which were not suspected had been contaminated by the foreign animals.

I conclude, therefore, that there is not sufficient evidence in either of these cases to show that Texas fever is disseminated in any other way than by means of the infected roads, yards, or pastures; and I insist more particularly upon this point because it furnishes the chief indications for the measures to be adopted in suppressing such outbreaks.

WHAT MEASURES SHOULD BE ADOPTED BY LOCAL AUTHORITIES FOR SUPPRESSING TEXAS FEVER.

When such outbreaks occur as have recently become so frequent in the Northern States, by the introduction of Southern cattle, it at once becomes a matter for serious consideration with the local authorities to decide what regulations should be enforced to protect the neighboring cattle from infection. The extreme virulence of the disease, and the suddenness with which large herds are almost exterminated, makes it seem imperative

that some very stringent measures should be adopted at once. The alarm is as unexpected as though a fire had broken out, and the emergency is so unprepared for that not unfrequently the ill-considered regulations enforced result in more real loss to the community than would be caused by the disease itself.

From a consideration of the facts which I have gone over, however, it is very evident that it is unreasonable and unjust to compel the owner of the Southern cattle to do more than keep these animals securely fenced upon the infected pasture until after a killing frost, and to bury beyond the reach of dogs any that may die. Where the infected pasture adjoins a road or neighbor's field, on which there are susceptible animals, it might be advisable, for complete security, to build a second fence which would keep the dangerous cattle from coming within a rod of such road or field. But to go upon a man's premises and kill his animals, sick or well, and compel him to pay an exorbitant price for the slaughter and burying, as may be done in outbreaks of this disease by the laws of some States, is an outrage for which there is no justification in the character of the affection.

The Southern cattle may infect pastures and roads, but there is not a particle of satisfactory evidence that they can disseminate the disease in any other way; and after the first really severe frost such grounds are no longer dangerous. If, therefore, these cattle are quarantined upon the infected pasture where they cannot come within a rod of other animals they can do no more harm. The sick native animals do not propagate the disease either directly or by means of pastures; they are consequently harmless, and it is questionable if the authorities should interfere with them, farther than to prevent their sale for food while diseased.

Finally, it must be a very extensive outbreak which will justify restrictions upon the ordinary traffic in the native cattle of any township or county. If a farmer has one infected field, that certainly is no sufficient reason why he should not be allowed to market animals which have not been upon that field since it was infected; and it is even less reason for quarantining his neighbors. It is true that the roads may be infected and that cattle driven

over them may be liable to contract the disease, but this is by no means certain, and if the owner chooses to take the risk he evidently has the right to do so, since he alone will suffer. If a road is known to be infected, a notice should be posted, in the interest of the public, at the nearest cross-road in each direction, warning people of the danger of driving cattle over it; but the owner of susceptible cattle is in no danger while he keeps them from the grounds upon which those from the South have traveled, and he, consequently, needs no such unusual measures for his protection as is applied in a general quarantine of all bovine animals.

It is plain, however, that the proper remedy is beyond all local regulations; that it should prevent the infection of roads, commons, and pastures, by prohibiting the introduction of cattle from the district permanently infected with Texas fever. This is a matter of infinite importance to the country at large, but it is also one that has been and will be attended with unusual difficulties and that will require the greatest wisdom and experience to perfect its many details. It is doubtful if it can ever be accomplished by the States individually, and it would seem that some way must soon be devised by which the National Government can draw a line from the Atlantic to the Rocky Mountains, across which all movement of cattle can be definitely controlled. If we are at present in the absurd predicament that the States are unable to enforce effective legislation because this is interfering with the prerogatives of the nation, and that the latter can do nothing because this would be violating the rights of the States, there certainly can be no good reason, in this practical age and with our present standard of intelligence, why we should not be able to extricate ourselves whenever we are satisfied that this is essential to our interests.

In cases where native cattle are upon infected pastures the *owner* can do something towards checking the progress of the disease among his stock by removing them at once to an uncontaminated field.

Respectfully submitted,

D. E. Salmon, D.V.M.

Asheville, N. C., Sept. 15, 1882.

SOCIETY MEETINGS.

The regular monthly meeting of the New York State Veterinary Society was held at the American Veterinary College, on the evening of November 14th, 1882, with the President in the chair. After the roll-call, the minutes of the previous meeting were read and adopted.

As the essayist had not then arrived, the President called for reports of cases.

Dr. Cattanach described a case in which he abstracted two hairy tumors from the back part of the posterior brachial region. They appeared to be two balls of hair, encysted, surrounded with pus, and intermingled with a sebaceous fluid. One was the size of a walnut, while the other was longer. Dr. C. C. Cattanach reported meeting with a second similar case in a horse of the same owner.

Dr. Liautard stated that he saw the second case, and had met with similar cases some years ago.

Dr. O. C. Jackson recorded a case of a horse which was brought to him, with the history that he had been unable to swallow anything for four days. On examination, the cause proved to be a corn-cob, which he found firmly fastened between the upper molar teeth, well back. The doctor removed the obstruction, and the horse swallowed readily.

Dr. Coates reported a like case in a cow, in which he also found the obstruction to be a corn-cob in the upper portion of the œsophagus, not fast, but suspended by a cord fastened to the cob, which had become entangled in her molars.

The essayist, Dr. Crane, now arrived, and read a carefully prepared paper on Rheumatism, as follows:

Mr. President and Gentlemen:

Rheumatism is dependent upon the presence in the blood of some poisonous material, which probably accumulates there in consequence of malassimilation. This poison is supposed to be lactic acid, and it is during an effort at its elimination that the

phenomena of rheumatism, especially acute rheumatism, are best studied. It is metastatic in character, and has a predilection for the fibrous, serous and muscular textures, attacking principally the joints, fascia, muscles in various parts of the body, and the endocardium and pericardium.

Etiology.—Cold; dampness; or may occur from other diseases, as influenza; epizootic pleurisy; or from rheumatic diathesis, which may be inherited or acquired; disorders of the digestive and respiratory organs, which load the blood with abnormal and probably acid elements; exposure to draughts, especially when perspiring, causing suppression of the functions of the skin. In regard to season, it prevails most in humid, changeable climates; rare in tropical and extremely cold climates.

Symptoms of acute form.—It is sudden in attack; generally the fever and local manifestations are simultaneous. Sometimes the pain and soreness precede the development of the complaint for a variable period. Dullness, with indisposition to move, followed by extreme lameness in one or more limbs; there may be swelling of the joints, or not. The affected joint or joints will be hot and painful to the hand; the pain differs in different cases. It is not intense, as a rule, as long as the parts are at rest. The least motion is very painful in severe cases. The parts generally affected are the fetlock, joints, hock, stifle, flexor tendons below the knee, the sesamodian bursa, the thecæ of the muscles of the loins and quarters, or of the thoracic walls, constituting pleurodynia. The swelling is due to a morbid increase of the liquid in the synovial cavity and into the surrounding structures. The swelling is at first soft, but later on becomes hard. Suppuration rarely occurs. In some cases one or more joints are affected simultaneously, or in quick succession; in others, it is limited to one joint. A peculiarity is its leaving one joint to fly to another. The temperature may be from 104° to 106° F., and in the cow, as high as 109°.

The pulse is hard and bounding, the mouth hot and dry, the breathing hurried. There will probably be costiveness, but may be the reverse. Perspiration is copious. The urine is less in quantity, and of an acid or neutral reaction, and is loaded with

the hippurates of soda and ammonia and hippuric acid. The specific gravity is high, owing to an increase of urea and decrease of water.

If the blood be drawn, the coagulum is firm and large, with a great increase of fibrin. In general, the strength is well preserved. It may attack the heart, but rarely, as endocarditis, with valvular lesions. Pericarditis is less frequent. When it attacks the heart, the pulse is quick, irregular, or intermittent, with a sighing or hissing murmur.

The duration of acute rheumatism varies. A peculiarity of it is it may not pursue a steady, continuous march, from beginning to end. Its course is often marked by fluctuations, as regards the general and local symptoms, especially the latter. Often after a few days the affected joints are free, or nearly so, from pain, soreness, etc., and convalescence seems to be at hand, when suddenly the symptoms are renewed. This may occur repeatedly during the career of the disease.

Acute synovitis might be confounded with acute rheumatism, but in acute synovitis from injury or cold, like articular rheumatism, there is pain and heat in a joint, with distention. But it does not, except in a rheumatic constitution, affect more than one joint, and there is scarcely any or no effusion into the surrounding tissues. The outline of the joint can be distinctly discerned, and fluctuation is readily detected. Often, too, the accumulation of fluid reaches an extent far greater than in rheumatic inflammation, and the febrile and constitutional derangement is not so severe as in active rheumatism, and the affection has no tendency to change its seat. Chronic rheumatism is a mere modification of the former, except that the fever may be absent. It is more persistent and less metastatic; it leads to alteration of structure, as ulceration of articular cartilage, and fibrous and bony enlargements, and in cattle, sometimes to suppuration. It may cause ossification of the walls of the heart. The acute often degenerates into the chronic, and an animal subject to chronic is often attacked by the acute form.

Pathology.—Pathologists disagree as to the poison. It is generally thought to be lactic acid. In man, uric acid is found

in the urine, and hippuric acid and its salts in herbivora. The lactic acid originates by conversion of the starch of the blood into lactic acid, which then combines with oxygen to form carbonic acid and water, and anything that interferes with this change may lead to the accumulation of the acid in the system. Dr. Richardson found that injecting lactic acid into the peritoneal cavity of dogs caused death, not by peritonitis, but by peri and endocarditis.

Some writers look upon rheumatism as an inflammation of the fibrous and serous membranes, the predisposition a deficiency of healthy tone in these textures, rendering them liable to be inflamed by variable temperature. There exists an alteration in the blood, a great increase of fibrine, which is due to faulty secondary indigestion and assimilation, or to an abnormal metamorphosis of tissue and the retention of products of such within the animal's body. In man there is copious perspiration, with an acid or sour smell; in the lower animals there may be the perspiration, but not the odor.

Treatment.—I shall not enumerate all that has been tried and recommended.

I believe it best to commence with a laxative or aloetic purge, followed up by the iodide of potassa and nitrate of potassa or colchicum in combination with nitrate of potash. If the pain is excessive, opium is indicated. I believe aconite of great value. It has sometimes seemed to exert a specific effect. Salycylic acid has been extolled, and was thought at one time it would become a specific for acute rheumatism. I have never had success with it myself.

Tonics are indicated if debilitated. The diet should be light and easy of digestion. Local applications should not be neglected, warm fomentations, flannel bandages, and warm clothing. Electricity deserves more than passing mention. It has done a great deal in the human practice. Liniments containing belladonna, opium, or aconite, are very good, but I think the best local treatment of all is blisters, to promote a serous discharge.

Dr. Coates stated that he favors salycylic acid as a remedy for the disease in plethoric subjects only. In anæmic animals, he considered tonics indicated.

Dr. Cattanach said that he had seen good results from the use of the Turkish bath, and the administration of alkalies internally.

The essayist was tendered a vote of thanks, after which the society went into executive session.

Dr. Coates proposed A. F. Martin, D.V.S., for membership. Dr. Kemp was appointed essayist for the next meeting, to be held at the American Veterinary College on Tuesday, Dec. 12th, at 8 o'clock P. M.

H. T. FOOTE, M.D., V.S.,
Secretary.

REVIEW.

ANIMAL PLAGUES.

BY G. FLEMING, F.R.C.V.S., F.R.G.S., ETC.

The numerous valuable works for which our profession are already indebted to the author of "Animal Plagues" are so well known to veterinarians, and the name that George Fleming has earned for himself as a writer and a veterinarian, is so widely and thoroughly established, that it needs only to mention the publication of a new book from his famed pen, to indicate that veterinary medicine and its literature are again under obligation for an important accession to their means of usefulness. In 1871 the first volume of "Animal Plagues" was presented to the veterinary world, and 1882 sees the continuation of the same work, presenting us with the history of plagues amongst animals from A.D. 1800 to 1844.

The amount of laborious research, the careful perusal of authorities of all kinds, the thorough and minute manner in which every subject must have been investigated, can only be appreciated by a close reading of these excellent works. By these aids the veterinarian of to-day is made familiar with the history of the

outbreak of every disease which has affected domestic animals throughout the world, and almost to modern times; and when the author tells us that this large undertaking was commenced twenty years ago and is only now brought to completion by the publication of this second volume, we cannot avoid a deep feeling of admiration for the courage with which the work has been so sucessfully brought to an end. And now that the history of these diseases have been made familiar to the veterinary profession, its members will become better and better prepared to combat their development and to oppose their ravages.

George Fleming has done much for the veterinary profession in England. The military and civil practitioner have both seen their professional standing advanced by his efforts in their behalf, but the English speaking world (that of England and of America) will always account his name as one of the foremost in the work of improving the opportunities of veterinary students to perfect their knowledge, by the numerous aids he has placed at their disposal.—[ED.]

THE PRINCIPLES AND PRACTICE OF VETERINARY MEDICINE.

By M. WILLIAMS, F.R.C.V.S., F.R.S.E., ETC.

(*3rd Edition.*)

But a few years ago the student of veterinary medicine had, so to speak, but one work at his disposal on "Veterinary Practice," viz., that of Percivall, and in those days, with the exception of Blaine and Youatt, veterinary class books of value were rare indeed. Recently, however, English writers have felt the deficiency, and have set themselves at work to remedy it, and the veterinarians of England and of America are now in possession of numerous excellent works on the various branches of their chosen science. Amongst those which have proved most successful and which have received a well deserved reception, is "The Principles and Practice of Veterinary Medicine," by Prof. W. Williams. The first edition, published in 1874, was soon followed by a second in 1879, and now, three years later, we are presented with a third edition, revised and enlarged by a supplement. Could the

sanguine and ambitious author ask more, as an evidence of the quality of his work and of its value in public appreciation?

The book before us, which is plainly but solidly bound, is brought out by the publishers in excellent style. It is illustrated by seven lithographs and a large number of wood cuts, and is divided into seventy-six chapters of all the various casualties likely to be met in the various organs of the animal. Beginning with an introduction giving the definitions of diseases, we are soon brought to the consideration of the important subjects of general pathology, the subject covering the first twelve chapters of the book. Contagious diseases, as of great importance in our day to the veterinarian as well as to the sanitarian, have received the author's closest attention, and the most recent discoveries in relation to these plagues are concisely treated. Enzootic, epizootic, eruptive and constitutional diseases cover nine chapters, and are followed by the dietetic diseases. From chapter 38 we enter into special pathology, or "local diseases," as they are named, and then we follow Prof. Williams through the various affections of nervous diseases; those of the respiratory organs; of the circulatory system, and of the digestive apparatus, which are extensively treated in twelve long chapters, and this local pathology terminates in five chapters upon the diseases of the urinary and genital apparatus. The last four chapters cover the interesting sections of parasitic diseases, a subject with which, up to a few years ago, the veterinarian had been but very imperfectly acquainted. This excellent work is concluded by a supplement. We think this one of the best parts of the book. We are there treated with three chapters, each one of which is most interesting and will be appreciated by the veterinarian who, wishing to keep himself posted with the recent discoveries in inoculation for the prevention of anthrax, fowl cholera and pleuro pneumonia, will read the first chapter; also to the one who, still an unbeliever in the germ theory (for there are a few of this kind still extant) will study the second chapter; besides which there is left to all those who have never met with that severe disease of sheep, louping-ill, the third and last chapters of this most valuable addition to standard veterinary works.—[Ed.]

CORRESPONDENCE.

TEXAS FEVER IN KENTUCKY.

DANVILLE, KY., November 6, 1882.

Prof. Liautard:

Dear Sir.—Texas fever has been prevailing to an alarming extent among the herds of Lincoln, Garrard and Boyle counties, and also several counties north of the Kentucky River, this State. The disease was brought in here by importations of "Tennessee cattle," so called, but which cattle really came from Georgia and Alabama. Such report may be of interest to the REVIEW.

Respectfully, &c.,

GEO. C. FAVILLE, D.V.M.

VETERINARY JURISPRUDENCE.

DECISION IN A CASE OF HORSE SALE.

BY CH. PEABODY, D.V.S.

The plaintiff, Wm. C. G. Phetteplace, sold to Dr. Traver, on December 28th, 1881, a chestnut gelding, warranting the same to be sound, taking a horse and allowing for it sixty-five dollars and a note for one hundred and fifty dollars, for four months, in payment for the same.

A few days after, Dr. Traver noticed the horse lame, and asked my opinion about it. On examination I found two large spavins, the one on the nigh leg being the largest. I informed the doctor of the fact, and advised him to sell the animal, not knowing at the time that he had recently purchased him. Not hearing anything further from the doctor, and seeing him use the horse every day, I supposed he had come to some settlement, until September 29th, 1882, when I was summoned to appear for the defendants.

The plaintiff sued for the recovery of the amount of the note. The defendants wanted to show that the horse was not as represented when sold, and as warranted. Testimony went to show to that effect by Mr. Thurber, myself and others.

The defendant claimed that there was no warranty given; merely an expression on his part, as far as he knew, that the horse was sound and had never been lame.

The doctor had worked this horse ever since he had owned him, December 29th, 1881.

The jury gave the plaintiff seventy-five dollars and costs of the Court.

CHARGE TO THE JURY BY HIS HONOR, JUDGE STINES.

Gentlemen of the Jury :—The plaintiff in this case sues for and upon a promissory note. There is no dispute between the parties that the note was executed, and it is produced, and that proves all the plaintiff is required to show upon his side of the case.

The defendants, however, claim that notwithstanding this note, they are not liable to pay, at least the full amount of the note, because it was one given in part payment for a horse that they bought of the plaintiff; that the plaintiff gave them a warranty as to the soundness of the horse, and that warranty having failed, they are entitled to have the price of the horse reduced on that account.

When a person undertakes to sell a thing to another, and, as a part of the contract, asserts a fact with reference to that property which is the subject of that contract, that is termed in law a warranty. It is not necessary that a person should use the term, "warrant." It is not necessary that he should say, "I warrant this to be thus and so." But if one is asked, with reference to a horse, for instance, "Is he sound?" and he replies, "He is," that is a warranty. If he is asked, "Is he sound?" and he replies, "He is, as far as I know," and the owner knows that there is an unsoundness about him, that is the same thing. In this case, the defendants assert that there was an absolute and express warranty of the horse, by reason of the unqualified statement of plaintiff that the horse was sound. The plaintiff says that he was inquired of, with reference to this horse, as to its being sound. "They asked me if the horse was sound; I told them the horse was sound, so far as I knew anything about him." And then, in another answer, he says that he knew no out about him. Now,

while the law is that when a person expresses simply an opinion about a piece of property, that is not a warranty, yet if he expresses an opinion with reference to that property, or expresses a fact in the form of an opinion, when he knows the contrary to be the fact, then he cannot shield himself under the mere form of the expression of an opinion. In this case I did not consider, and do not consider, any material difference, or any point upon which the jury need to be troubled in this matter, for the reason that if the language, as stated by the plaintiff, was that the horse was sound so far as he knew, yet being a horseman himself, and offering himself as an expert upon the stand, and the injury being of such a character as such an expert and horseman must have known, therefore if the injury existed at all, or if the unsoundness existed at all at the time of the sale, it appears from the testimony that the plaintiff must have known of it: and therefore, whether the language was in the unqualified form, as claimed by the plaintiff, if there was a spavin upon this horse at the time he was sold, the plaintiff himself, being a horseman, and supposed to know about these things—why, if he knew of it at the time, there would be no difference between the two. Nevertheless it is always a question of fact for the jury to determine, whether there was a warranty or not, and it is so in this case. When in the trading for property a man asserts a fact, and it is relied upon by the other side, that amounts to a warranty of the property. When he asserts a fact, I mean, with reference to which the purchaser is ignorant. If a man undertakes to warrant that which another can see with his own eyes, the purchaser is not supposed to be deceived in buying under such a warranty.

For instance, if a man warrants a horse to be entirely sound, and one ear is gone, any one can see that there could be no action upon such a warranty as that. But when a man asserts a fact of which the buyer is ignorant, and with reference to which the seller is supposed to have knowledge, that amounts to a warranty; but when a man expresses simply an opinion about property with reference to which he has simply formed a judgment, then that is not a warranty. As, for instance, suppose one was to ask the seller of a horse if he was able to do a certain kind of

work, and he should answer, "I should think he would;" that evidently would be a mere expression of opinion, and would not amount to a warranty. It is for the jury to determine from the language of the party whether the seller wishes to convey to the purchaser an idea of the existence of a fact upon which the trade was founded and based. If so, it amounts to a warranty, no matter what form or expression was used between the parties. Therefore, the first question you have to settle is, Was there a warranty? If the language was as claimed by the defendant, it was a warranty. If the language as claimed by the plaintiff, that the horse was sound so far as he knew, and from his experience and knowledge of horses and the nature of the defect, you believe he must have known of it at the time, then it would be clearly a warranty. That is a question of fact, however, for you to pass upon, as to which it was. If it was a mere expression of opinion on the part of the plaintiff, and the defect was not of such a character as to lead you to believe that he must have known of it, then it would not come within the definition of a warranty; if there was no warranty, then, of course, there is no defence to this note, because their entire defence is based upon the claim that there was a warranty of the horse and that the horse has proved unsound. So that is the first question for you to consider.

Secondly, if there was the warranty, was the horse unsound at the time of sale. It is not a question as to whether the horse became unsound afterwards, but was he sound at the time. And the fact of his becoming unsound afterwards is only a circumstance which the jury are entitled to consider for the purpose of throwing light upon the question as to whether he was unsound at the time of sale. The defendants testify that, although noticing a peculiarity in his gait at the time of purchase, they were not aware of the fact of his unsoundness until some time after the purchase, and they offer testimony to you for the purpose of showing that the nature of the unsoundness and the condition of the horse at the time was such as to raise the presumption that the horse must have been unsound for so long a time as to cover the time of the purchase. In other words, that it was a kind of injury or defect that must have existed longer than the time

which they had owned him, and that, therefore, he must have been unsound at the time of the sale. Upon the other hand, it is claimed that there was no evidence of unsoundness at the time of the sale, and that an injury of that character might arise within the period of their ownership, and from various causes. It is for you to say which, upon the testimony, you are led to believe. If the horse was unsound at the time of the sale, and the burden is upon the defendants to prove that he was, and there was a warranty, then the defendants are entitled to a reduction of the purchase money. If there was no warranty, or if from the testimony you are led to believe that the horse was sound at the time of the sale, and that this injury or defect came upon him after the sale, then, in either of these events, the defendants would not be entitled to any reduction, but the plaintiff would be entitled to recover the full amount of his note. These are the two questions of fact which you are to pass upon and settle. If you find that there was a warranty and the horse was unsound at the time of the sale, then the defendants are entitled to have this note which they have given as part payment for the horse reduced by the amount which they have suffered by reason of that particular unsoundness. That is to say, the measure of damages in the case of a breach of warranty would be the difference in the value of that horse on account of that unsoundness. How much would that defect depreciate the value of the horse? How much have they suffered on account of that warranty not being true? As the plaintiff's counsel has stated, I have heard no testimony in this case that shows in dollars and cents how much that would be. Witnesses have testified that it would depreciate the value of the horse; to what extent has not been shown; and, therefore, it is for the jury to determine upon the testimony that they have heard, considering the price of the horse, its value, as stated upon the one side and the other; the nature and extent of the lameness, and the nature and extent of the injury, the time of its continuation, how far it would interfere with the beneficial use of the property by the defendants, and such circumstances as those. Taking all these things into consideration, it is for you to say if you find there was a warranty and a breach of it, how much that

would depreciate the value of the horse, deducting that amount from the amount of the note, the plaintiff would be entitled to recover the balance, whatever it might be.

Mr. Wilson, for the plaintiff: I desire to except and object to that part of Your Honor's charge which has just been given with reference to the right of the jury, under the testimony, to find the damages as claimed.

Judge Stines: We do not take objections in that way. If you have any requests to make we will hear them.

Mr. Wilson: I request your Honor to charge as follows:—There being no evidence in the case of what the amount of damages is, the jury are not warranted, in the absence of such testimony, in finding any other amount than the amount of the note. The jury would not be warranted in finding any thing else.

Judge Stinis: That I deline, gentlemen. The defendant, of course, is bound to prove there is some damage, and if there are no sufficient data given in the case for the jury to determine what the damages are, they can come to no conclusion on that point. But it is not necessary for the man to show in dollars and cents, by witnesses, what the damage is, because that would, after all, be but the opinion of the witnesses, and the opinion of the jury would have to control eventually. If, from the nature of the injury and the condition of the horse, and the circumstances attending the case, you are satisfied that there is a pecuniary damage, then, from those circumstances, you are warranted in asserting it.

Mr. Wilson: That is just what I objected to, that portion of your charge.

NEWS AND SUNDRIES.

Pleuro-Pneumonia.—New outbreaks of contagious pleuro-pneumonia are reported in Caroline County, Maryland.

Northern Cattle in Texas.—Texas cattle raisers state that Northern cattle sicken and a great many die when introduced into their State.

ARMY VETERINARY MATTERS.—Junior Veterinary Surgeon Poulson, 7th Cavalry, has sent in his resignation, to take effect Nov. 30, 1882. Veterinary Surgeon C. L. Hingston, 3d Cavalry, has sent in his resignation, to take effect Nov. 30, 1882.

LIBERAL DONATION TO A VETERINARY COLLEGE.—A subscription of $10,000 from Mr. J. B. Lippincott for the establishment of a veterinary college in connection with the University of Pennsylvania was received by the trustees of that institution on Nov. 14th.—*N. Y. Sun.*

PLEURO-PNEUMONIA IN PENNSYLVANIA.—Pleuro-pneumonia has appeared among the cattle at Lancaster, Pa. J. H. Saunders of Chicago, secretary of the Cattle Commission, pronounces Baltimore and the farms adjacent a hotbed of the disease.—*Breeders' Gazette.*

SUPERFŒTATION.—A friend sends us a paper from St. Paul, Minnesota, containing the following statement: "Truman M. Smith, the well-known Dayton bluff gardener, reports an interesting freak of nature. He has a young cow, about three years old, which calved on the 3d of May last. On the 28th of September she had another calf. Both calves were perfect in every respect."—*Cultivator and Country Gentleman.*

POISON FOR TUBERCULAR BACTERIA.—The *Lancet* says that M. de Korab has cultivated the bacteria of tuberculosis in bovine blood serum, and after treating some of this preparation with *helenine*, it was found to have lost its infective properties, while similar material not exposed to this drug readily caused tuberculosis when injected into animals. We anxiously await further developments.—*Medical and Surgical Reporter.*

QUARANTINE STATIONS.—The Treasury Department is informed that arrangements are nearly completed at Baltimore, Boston and Portland, for providing shelter and other accommodation for imported cattle, under an appropriation of $50,000 made at the last session of Congress. The station selected for the Maine district is at Deering, and consists of nearly ten acres of land upon which are located two barns, which, with slight

alterations, can be utilized for the required purpose. The rent is $300 per annum. It is proposed to erect sheds for the shelter of cattle where the buildings on the land selected are not suitable for the purpose. The Government will furnish only shelter and water, and the owners will have to provide for the care and feeding of the cattle—*Home Farm.*

Inoculation of Frogs.—M. Pasteur demonstrated, two years since, that fowls contracted charbon only when their temperature was lowered, their normal temperature being 111° Fahr. M. Paul Gibier has recently determined that frogs contract charbon when under the influence of relatively high pressure. He placed twenty frogs in tepid water, and inoculated them with charbon virus; five of them contracted the malady. Their blood indicated the presence of bacteria. These elements were larger than those observed in the bovine and ovine species. Guinea-pigs and rabbits were inoculated with the blood of the frogs, and contracted charbon.—*Medical Gazette.*

Chicken Cholera.—The following is from a correspondent of the New York *Herald* at Zanesville, Ohio: Several experiments have been made during the past five years by different parties for the purpose of preventing the spread of chicken cholera by inoculation or vaccination. We have, during the past two years, vaccinated the fowls in nineteen different yards where the cholera was prevailing badly, and in each yard we left some common fowls not vaccinated, and they all died; but of the 2,000 vaccinated only eleven died, although they were in the same yard with those that were dying daily by the score. We have reason to believe that this chicken vaccination is as effective in preventing cholera among fowls as vaccination is in preventing small-pox among the human family. Vaccinate a hen, and in eight days her system will be thoroughly inoculated; then cut off her head and catch all the blood in some vessel; then pour the blood on paper to dry; a half drop of this blood is sufficient to vaccinate a fowl, and the blood of one hen will vaccinate your whole flock. Catch the fowl you wish to vaccinate and with a pin or knife make a little scratch on the thigh (just enough to draw

blood), then moisten a little piece of the paper with the dried blood on and stick it on the chicken's leg where you scratched it, then let the fowl run, and you need have no fear of chicken cholera. As the result of my many experiments I have dried blood enough, I would suppose, to vaccinate 10,000 fowls, for which I have no use, as I do not sell patent medicines. If any of your readers are enough interested in poultry to try this preventive, by writing to me I will send free of any charge enough dried blood to start with. All I ask is that they send immediately, before blood loses its strength, and report the result of their experiments to your many readers.

EXCHANGES, ETC., RECEIVED.

HOME.—Medical Record, National Live Stock Journal, Proceedings of the Medical Society of the County of Kings, Home Farm, Minnesota Farmer, College and Clinical Record, City and Country, Practical Farmer, Rural New Yorker, Ohio Practical Farmer, Medical and Surgical Reporter, American Agriculturist, Breeders' Gazette, Country Gentlemen, Turf, Field and Farm, American Cultivator, &c.

FOREIGN.—Recueil de Medecine Veterinaire, Archives Veterinaires, Presse Vsterinaire, Annales de Bruxelles, Clinica Veterinaria, Journal de Zoötechnie, Review d'Hygiene, Veterinary Journal, Veterinarian, Australian Veterinary Journal, Revue fur Thierheilkunde und Thierzucht.

JOURNALS.—Medical Herold, Midland Farmer, American Grange Bulletin, Our Dumb Animals, Farmers' Magazine, Quarterly Journal of Veterinary Science in India, &c.

BOOKS.—Animal Plagues, Principles and Practice of Veterinary Medicine, Chart of the Muscles of the Horse.

COMMUNICATIONS.—J. Rogers, C. Myers, Jr., A. A. Holcombe, G. Faville, C. Peabody.